

Customer No.: 31561
Application No.: 10/707,112
Docket No.: 11761-US-PA

AMENDMENT

To the Claims:

Please amend the claims according to the following listing of claims and substitute it for all prior versions and listings of claims in the application.

1. (currently amended) A method of fabricating a passivation layer, comprising the steps of:

providing a substrate having a plurality of device structures and at least an interconnect thereon;

forming a patterned metallic layer over the interconnect;

performing a plasma-enhanced chemical vapor deposition process to form a first passivation layer directly on the metallic layer, wherein the plasma-enhanced chemical vapor deposition process is carried out at a processing pressure between ~~about~~ 21 to 25 Torrs and with a processing power between ~~about~~ 1 to 45 Watts; and

forming a moisture impermeable second passivation layer over the first passivation layer.

Claim 2 (cancelled)

3. (original) The method of claim 1, wherein the first passivation layer comprises a silicon oxide layer.

4. (original) The method of claim 1, wherein the second passivation layer comprises a silicon nitride layer.

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5. (previously presented) A method of fabricating a passivation layer, comprising the steps of:

providing a substrate having a plurality of device structures and at least an interconnect thereon;

forming a patterned metallic layer over the interconnect;

performing a semi-atmospheric chemical vapor deposition process with liquid tetra-ethyl-ortho-silicate (TEOS) and ozone inside a reaction chamber to form a first passivation layer directly on the metallic layer, wherein the liquid tetra-ethyl-ortho-silicate flowing into the reaction chamber has a flow rate between 500 sccm to 3000 sccm and the ozone flowing into the reaction chamber has a flow rate between 5000 sccm to 15000 sccm; and

forming a moisture impermeable second passivation layer over the first passivation layer.

Claims 6-7 (cancelled)

8. (original) The method of claim 5, wherein the pressure inside the reaction chamber during the semi-atmospheric chemical vapor deposition process is between about 20 to 750 Torrs.

9. (original) The method of claim 5, wherein the semi-atmospheric chemical vapor deposition process is carried out at a temperature between about 200°C to 600°C.

10. (original) The method of claim 5, wherein the first passivation layer comprises a silicon oxide layer.

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11. (original) The method of claim 5, wherein the second passivation layer comprises a silicon nitride layer.